

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



PCT



(43) International Publication Date  
7 July 2005 (07.07.2005)

(10) International Publication Number  
**WO 2005/060364 A3**

(51) International Patent Classification<sup>7</sup>: C12N 9/22,  
C07H 21/04

(21) International Application Number:  
PCT/US2003/036874

(22) International Filing Date:  
18 November 2003 (18.11.2003)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (*for all designated States except US*): **THE GOVERNMENT OF THE UNITED STATES OF AMERICA AS REPRESENTED BY THE SECRETARY OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES** [US/US]; National Institutes of Health, Office of Technology Transfer, 601 1 Executive Boulevard, Suite 325, Rockville, MD 20852-3804 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **FLOMERFELT, Francis, A.** [US/US]; 10902 Stillwater Avenue, Kensington, MA 20895-1130 (US). **GRESS, Ronald, E.** [US/US]; 15621 Ancient Oak Drive, Gaithersburg, MD 20878-3560 (US).

(74) Agent: **NOONAN, William, D.**; Klarquist, Sparkman, LLP, One World Trade Center, Suite 1600, 121 S.W. Salmon Street, Portland, OR 97204 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

— *of inventorship (Rule 4.17(iv)) for US only*

**Published:**

— *with international search report*  
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:  
12 January 2006

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: SPATIAL FOR ALTERING CELL PROLIFERATION

(57) Abstract: This disclosure provides methods useful for altering cell proliferation by modifying SPATIAL activity in cells. In some methods, thymocyte numbers in subjects with disease-associated immunodeficiencies are increased by administering an agent that inhibits SPATIAL activity. Also provided are methods useful for increasing thymocyte number in a subject by administering an agent that interferes with an interaction between SPATIAL and Uba3. In other methods, cell growth is inhibited by introducing or expressing a SPATIAL or SPATIAL-related polypeptide or nucleic acid in one or more cell(s), such as neoplastic cell(s). Further provided are methods of identifying agents that modify (for example, inhibit) SPATIAL expression or activity, or which interfere with an interaction between SPATIAL and Uba3 polypeptides, and therefore which are useful in influencing thymocyte number.



WO 2005/060364 A3